

$$1) 5.04 + 8.4 \div 7 \\ = 5.04 + 1.2 \\ = 6.24$$

$$2) \frac{2}{7} \left(1\frac{3}{4} + \frac{3}{8} \right) \\ = \frac{2}{7} \left(\frac{7}{4} + \frac{3}{8} \right) \\ = \frac{2}{7} \left(\frac{17}{8} \right) \\ = \frac{34}{56} \\ = \frac{17}{28}$$

$$3) 3(2x-4) - 4(3x+1) \\ = 6x - 12 - 12x - 4 \\ = -6x - 16$$

$$4) f(x) = 7 - 4x \\ (a) f(-2) = 7 - 4(-2) \\ = 7 + 8 \\ = 15$$

$$(b) f(t) = 9 \\ 9 = 7 - 4t \\ \Rightarrow 4t = -2 \\ \Rightarrow t = -\frac{1}{2}$$

$$5) 2x^2 - 7x - 15 \\ = (2x+3)(x-5)$$

$$6) (a) m_{AB} = \frac{3 - (-7)}{4 - (-1)} \\ = \frac{10}{5} \\ = 2$$

$$(b) y = 2x - 5$$

$$(c) (3k, k) \\ k = 6k - 5 \\ \Rightarrow k = 1$$

$$7) (a) 3a + 2b = 145 \quad \text{--- (1)}$$

$$(b) 5a + 3b = 240 \quad \text{--- (2)}$$

$$(c) 5 \times (1) - 3 \times (2): \\ b = 725 - 720 \\ \Rightarrow b = 5$$

$$8) (a) p(6) = \frac{1}{10}$$

$$(b) p(\text{yellow}) = \frac{1}{40}$$

$$9) 25\%$$

$$10) (a) 45 \text{ pupils} \rightarrow 9 \text{ teachers}$$

$$(b) \frac{100}{1+3+5} \approx 5$$

\(\therefore\) Max number of pupils is:

$$5 \times 15 = 75.$$

$$11) (a) S_3 = 1+3+5 \\ = 9$$

$$(b) S_n = n^2$$

$$(c) (n+1)^{\text{th}} \text{ term} = S_{n+1} - S_n \\ = (n+1)^2 - n^2 \\ = 2n + 1$$

$$12) (a) 8^{2/3} \\ = \sqrt[3]{8^2} \\ = \sqrt[3]{64} \\ = 4$$

$$(b) \frac{\sqrt{24}}{\sqrt{2}} \\ = 2\sqrt{6} \\ = \sqrt{12} \\ = 2\sqrt{3}$$

$$13) \text{Area Parquet} = \frac{1}{2} \times OB \times TO \\ = \frac{1}{2} \times 2x \times TO \\ = TOx \\ \text{Area Clipboard} = (3x)(4x) \\ = 12x^2 \\ \therefore TOx = \frac{12x^2}{4} \\ \Rightarrow TO = 3x$$

$$1) 5000 \times (1.006)^3$$

$$= 5090 \text{ (3SF)}$$

$$2) (a) \sum x = 276$$

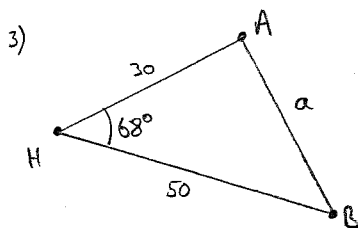
$$\bar{x} = 46$$

$$(b) \sum x^2 = 12780$$

$$s = \sqrt{\frac{12780 - \frac{276^2}{6}}{6-1}}$$

$$= 4.0987$$

(c) There is less spread for the price of sugar.



$$a^2 = 30^2 + 50^2 - 2 \times 30 \times 50 \cos 68$$

$$\Rightarrow a = 47.7 \text{ km (1DP)}$$

$$4) (a) A = \pi \times 5^2$$

$$\therefore V = 14 \times 25\pi$$

$$= 1099.6 \text{ cm}^3 \text{ (1DP)}$$

$$(b) 600 = \pi \times 5^2 \times h$$

$$\Rightarrow h = \frac{600}{25\pi}$$

$$\Rightarrow h = 7.6 \text{ cm (1DP)}$$

$$5) 20 = \frac{n(n-3)}{2}$$

$$\Rightarrow n^2 - 3n - 40 = 0$$

$$\Rightarrow (n-8)(n+5) = 0$$

$$\therefore n = 8 \text{ or } -5$$

$$6) \sin 34 = \frac{SV}{13.1}$$

$$\Rightarrow SV = 13.1 \sin 34$$

$$= 7.33 \text{ cm (2DP)}$$

$$\cos 25 = \frac{SW}{7.33}$$

$$\Rightarrow SW = 7.33 \cos 25$$

$$= 6.6 \text{ cm (1DP)}$$

$$7) 38 = \frac{1}{2} \times 14 \times 9 \sin(A\hat{B}C)$$

$$\Rightarrow A\hat{B}C = 37.1^\circ \text{ (1DP)}$$

$$8) (a) -1, 3$$

$$(b) y = k(x+1)(x-3)$$

$$(0, -6)$$

$$-6 = -3k$$

$$k = 2$$

$$(c) \text{min turning point when } x = \frac{(-1+3)}{2}$$

$$= 1$$

$$\text{when } x=1, y = 2(2)(-2)$$

$$= -8$$

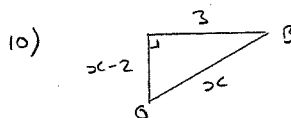
$$\therefore \text{turning point is } (1, -8)$$

$$9) \text{Scale factor} = \frac{9}{6}$$

$$= 1.5$$

$$\therefore \text{New Volume} = 30 \times (1.5)^3$$

$$= 101.25 \text{ ml}$$



$$3^2 + (x-2)^2 = x^2$$

$$\Rightarrow 9 + x^2 - 4x + 4 = x^2$$

$$\Rightarrow 13 = 4x$$

$$\Rightarrow x = 3.25 \text{ m}$$

$$11) (a) S = \frac{0}{T}$$

$$\Rightarrow T = \frac{0}{S}$$

$$= \frac{2c}{75} \text{ hrs}$$

$$(b) \text{total time} = \frac{2c}{75} + \frac{2c}{50}$$

$$= \frac{2x + 3x}{150}$$

$$= \frac{5x}{150}$$

$$= \frac{2c}{30}$$

$$\text{total Distance} = 2x$$

$$\therefore \text{Average Speed} = \frac{2x}{\frac{2c}{30}}$$

$$= 60 \text{ km/h}$$